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MEDICAL JURISPRUDENCE

INSTRUCTION PAPER

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MEDICAL JURISPRUDENCE

CHAPTER I

DEFINITION AND SCOPE OF SUBJECT

§ 1. **Meaning of Term.** Medical jurisprudence, otherwise known as forensic medicine, and as juridical medicine, is not, properly speaking, a system of jurisprudence at all, but consists in the application of facts, popularly called medical, to the solution of certain legal questions. It is defined as "that science which applies the principles and practice of medicine to the elucidation and settlement of doubtful questions of law."[1]

There is no department of human knowledge but that may, at some time, be necessarily invoked by the law to furnish information as to facts, in order that truth may be established and justice administered. For this purpose the medical sciences must frequently lend their aid; and the knowledge of certain facts of anatomy, physiology, *materia medica,* obstetrics, surgery, physics, chemistry, bacteriology, toxicology, and psychical medicine (the branch of medicine relating to mental diseases), and their relation to the solution of certain legal problems, constitutes what is termed "medical jurisprudence".

§ 2. **Connected with What Questions.** Medical jurisprudence deals with such questions as the fact and causes of death; with the identification of bloodstains and the detection of poisons; with evidence relating to sexual crimes, such as rape and sodomy; with questions relating to legitimacy, involving facts connected with the period of gestation and paternity; with facts relating to impotence, sterility, pregnancy, abortion, and infanticide; with ques-

[1] Bouvier's Law Dict.

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tions of identity of persons, survivorship, and certain phases of life insurance; with wounds, personal injuries, and feigned diseases; and with questions of mental unsoundness and insanity. This enumeration of matters does not exhaust the list, although it comprises the most important branches of the subject.

§ 3. **Questions of Fact and Evidence.** It is obvious that medical jurisprudence deals, therefore, with matters of fact, or of evidence. From his knowledge of scientific facts relating to the foregoing questions, the lawyer must form his opinions and advise his clients. In connection with the trial of causes, the facts must be testified to by experts or persons learned and skilled in the medical sciences.

§ 4. **Scope of Present Article.** Medical jurisprudence is a vast subject, and volumes have been written upon it. Anything like a full discussion of any of the topics referred to in this article is impossible owing to the necessary limitation of space. However, it is the writer's desire to present in a concise way the important outlines of the subject in the hope that the reader's or practitioner's attention may be directed profitably to the line of investigation to be pursued when he is confronted with legal questions requiring evidence upon such matters.

The reader should ever keep in mind the important fact that the sciences that contribute to our knowledge of medical jurisprudence are constantly progressing, and that theories of even a few years ago may require modification in the light of modern discoveries. This is especially true in toxicology.

CHAPTER II

PROOF OF DEATH

§ 5. Fact of Death. Although the fact of death may be proved in civil cases by circumstantial evidence,[1] and likewise even in homicide cases, where the *corpus delicti* (physical evidence of the crime) may be established by other than direct proof,[2] nevertheless, the best evidence as to death, especially in criminal cases, is the finding and inspection of the dead body.[3]

SIGNS, TIME, AND MODE OF DEATH

In connection with the legal investigation of the death of persons, the facts upon which testimony as to the death is based are a proper subject of inquiry, and they become of great importance when the case hinges upon the time of death.[4] Physiologists distinguish between molecular and somatic death, the former meaning the death of any tissue or part of the body, the latter meaning death of the whole body, that is, death in the popular and legal sense. Death is the termination of life and the most prominent signs of such termination are the complete and continuous cessation of the heart's action; entire cessation of circulation and respiration; changes in the eye, in that it no longer contracts or dilates, as shown by the fact that the pupil no longer responds to the action of a bright light when focused upon it by a lens—the test of "oblique illumination", though in some diseases of the brain, the eye shows the same insensibility to light; changes in the temperature of the body, which is sometimes a valuable means for deter-

[1] John Hancock Mut. Life Ins. Co. v. Moore, 34 Mich. 41.

[2] Winslow v. State, 76 Ala. 42; Cavanass v. State, 43 Ark. 331; Campbell v. People, 159 Ill. 9, 42 N. E. 123, 50 Am. St. Rep. 134; State v. Winner, 17 Kan. 298.

[3] U. S. v. Williams, 28 Fed. Cas. No. 16707.

[4] Evans v. People, 49 N. Y. 86, 90.

mining how recently death occurred; *rigor mortis,* or cadaveric rigidity; and putrefaction.

§ 6. **Changes in Temperature.** As stated above, the degree of temperature shown by the body is, at times, important evidence of the time elapsing since death. The normal living temperature is about 98° F. In from two to four hours after death it averages 96.9°. In from eight to twelve hours, it usually falls to 77.9°, and continues to cool until it attains the temperature of the surrounding medium. Casper says that most bodies are quite cold in from eight to twelve hours, and in this statement Woodman and Tidy agree.[5] Dr. Reese places the average at from fifteen to twenty-four hours.[6] It is not, however, a sudden fall of temperature that indicates death, nor the absolute temperature, but a steady, progressive, continuous cooling. Moreover, in death by some forms of disease, as cholera, yellow fever, smallpox, and lockjaw (tetanus), the temperature actually rises after death has taken place.

§ 7. **Rigor Mortis.** By *rigor mortis,* otherwise known as cadaveric rigidity, is meant the stiffening of the muscles. The time when this change sets in and the period of its duration varies greatly. It may begin from a few minutes to eighteen or twenty hours after death. It may last only a few minutes or may continue for weeks. It usually begins, however, in from three to six hours after death, the average duration being twenty-four to forty-eight hours. *Rigor mortis* may be simulated by catalepsy, but in such cases there will be some evidence of life.

§ 8. **Suggillation, or Cadaveric Lividity.** A few hours after death, generally from three to ten hours, the blood of the body settles by gravitation in the capillaries of the dependent parts of the body, producing livid, or purple, or black and blue patches upon the skin. This change is known as suggillation (from the Latin *suggillare,* to beat black and blue), and is popularly referred to as "death-spots". These changes in color may be mistaken by the

[5] W. & T., For. Med. & Tox. 50.

[6] Reese, Med. Juris. 33.

inexperienced for bruises (ecchymosis), the inference being that they were caused by blows of violence upon the body before death. A simple test reveals, however, the true nature of these patches. If a scalpel is drawn through a suggillation no blood will flow, while in case of a bruise such a cutting of the tissue will be followed either by some flow of blood or traces of blood-clots will be observed.

§ 9. Putrefaction. The most positive sign of death is putrefaction. As a rule this change does not take place till *rigor mortis* passes, yet it greatly varies in its commencement and in its progress in different bodies. Conditions, moreover, of atmospheric air, moisture, and warmth greatly influence the question. Dry air, such, for example, as that of an arid desert retards putrefaction and causes the fluids of the body to evaporate and the flesh to shrivel. Bodies buried in hermetically-sealed coffins may be preserved from decay for many years. Bodies lying in snow or ice do not putrefy, and if a body with evidences of putrefaction upon it is found in snow or ice, it may be concluded with certainty that the victim did not perish from the cold, but was a putrefying corpse before the ice was formed around him or before his body was deposited in that place.[7] Moisture hastens the progress of decay, and for this reason dead bodies taken from water decompose very rapidly. The progress of putrefaction is also influenced by the age of the deceased, the condition of the body, and the kind of death.

Casper says that his experience leads him to conclude that the following proportion is not far from the exact truth:

"Three bodies, other things being equal, will exhibit nearly the same degree of putrescence; of which bodies *A* shall have been lying in the open field for one month, *B* in the water for two months, and *C* eight months buried in a coffin in the usual manner. Any very important error will be avoided by attending to this ratio, with the requisite attention to the modifying circumstances involved in each individual case."[8]

[7] Casper, For. Med., Vol. 2, p. 277.

[8] Vol. 1, p. 37, Syd. Soc. (translation).

Chronological Order of Putrefaction. The first usual sign of putrefaction, the greenish color of the abdomen, generally takes place in from twenty-four to seventy-two hours. After three to five days from death this discoloration has spread over the entire abdomen, and patches of green appear on other parts of the body. In about eight or ten days, the discoloration has become darker and more generally spread over the body. In fourteen to twenty days, the hues of putrescence have spread over the entire body which is now bright, frog green and blood-red brown. In from four to six months, or sooner in bodies that have lain in warm and moist media, colliquative putrefaction commences, all the soft parts have commenced to break down into soft pulp, or have vanished, leaving entire bones bare and exposed. No trace of a physiognomy is any longer discernible.

The internal organs never, under any circumstances, yield to putrefaction in the same period; consequently, the order in which these organs undergo putrefaction affords a surer means of determining the probable period of death than the stages of putrefaction on the surface of the body. The organ first to putrefy is the trachea, succeeded by the following order: the brain of new-born children, stomach, intestines, spleen, omentum and mesentery, liver, brain of adult, heart, lungs (sometimes earlier than the heart), kidneys, urinary bladder, gullet, pancreas, diaphragm, larger blood-vessels, and the uterus. The uterus is the last organ of all to putrefy, being known to retain its identity for seven months after death, which is a very important factor in determining, by post-mortem examination, the fact of pregnancy.

§ 10. Saponification or Adipocere. When a dead body has been buried in wet or very moist soil, or has lain long in the water, the tissues instead of undergoing putrefaction become changed into substance called adipocere (from Latin *adeps,* fat, and *cera,* wax). The fatty acids of the body combine with the ammonia generated by decay, forming an ammoniacal soap; hence, the synonymous name of

saponification is given to this post-mortem change. The fact of saponification is important, at times, when bodies are found in the water, for the determination of the probable time the body has been in the water. Some authorities say that a body may remain in the water a year before its conversion into adipocere.

§ 11. Mode of Death. One of the most important questions presented to the medical jurist is the mode or cause of death. The limits of this article permit, however, only certain hints in connection with such investigations.

In death from suffocation, strangulation, hanging, and drowning, life is destroyed, usually, by apnœa (asphyxia). This means that death begins at the lungs, the air—that is, the oxygen—being excluded from these organs. In all cases of mysterious death by violence, the surrounding evidence should be carefully considered. Were there evidences of a struggle? What was the external appearance of the body? Was a post-mortem examination made?

Drowning. In supposed death by drowning the body should be examined for marks of violence to determine whether wounds were inflicted, or rape committed, in case of a female. Death does not always take place in the same way. The victim may have been intoxicated and may have struck upon a rock when falling into shallow water. Also, the body may have been dead when thrown into or placed in the water. In some cases an examination for poison may be suggested. The probable time the body has been in the water may also be important. Moreover, it should be borne in mind that it is not necessary in cases of drowning that the whole body should have been submerged. Many instances have occurred where very young children, epileptics, and drunken persons have fallen into small pools or streams, the mouth and nose alone being immersed, and have thus met death by drowning.

Hanging. While in a mere suspension of the body apnœa is the usual cause of death, yet death may result from apoplexy, or from mixed causes. The place, and the condition of the body, should be carefully examined for evidence

of suicide or the contrary. It is also possible that the body was dead before it was suspended.

Strangulation. In death by strangling, evidence of a ligature around the neck, or of direct pressure of hands and fingers upon the throat, should be obtained.

Suffocation. Investigations into death by suffocation are more frequently, perhaps, connected with the death of infants than with any other class, and the utmost care should be taken by medical examiners and others before venturing an opinion as to homicidal death, since there are numerous instances of accidental death by suffocation. For example, an infant may have been too closely wrapped with clothing, or may have been lain upon in bed by a drunken person. The cases of suicide by suffocation, however, are very rare.[9]

§ 12. Bloodstains. The examination of bloodstains, especially in connection with criminal causes, occupies a very important field in the domain of medical jurisprudence. When stains or spots are found upon the clothing or other articles of a suspected person, the question whether such stains are those of blood may become vital in the chain of evidence.

Bloodstains may be determined in various ways. They may be identified by chemical tests, by the microscope, by the spectroscope, and by the biological, or serum, test. Chemical tests are made by noting the reaction of certain chemical reagents on the peculiar coloring-matter (hæmoglobin) of the blood, either as certain crystals (hemin crystals) may be formed, or characteristic precipitates produced. The chemical tests will answer the question whether the suspected stains are composed of blood or not.

Microscopic Tests. Human bloodstains, however, may be distinguished from the bloodstains made by other animals. The constituents of the blood that are of practical medico-legal value are the red corpuscles or cells. These

[9] Casper, Vol. 2, 123, 130, 134; Reese, Med. Juris., 143; W. & S., Vol. 3, p. 336 *et seq.* For a review of the medical testimony in a trial for murder by suffocation, resulting in an acquittal, see Wh. & St., Vol. 3, p. 303.

are the cells that contain the coloring matter, the hæmoglobin. By means of the microscope vast myriads of these little bodies may be seen moving in the fluid, and with the use of very high magnifying powers, usually from 1,000 to 1,500 diameters, these red corpuscles may be carefully measured and in this way their identification with human blood determined. The test depends upon the following facts. The red corpuscles of mammals are circular and have no nucleus. The corpuscles of birds and fishes are oval, larger in size than the corpuscles of mammals, and have a nucleus. Whether the blood is mammalian or that of a bird or of a fish, is not, therefore, difficult to determine.

Among the mammals, the corpuscles of the horse, cow, cat, pig, sheep, and goat are noticeably smaller than human corpuscles. The dog and rabbit, however, have corpuscles that very closely approach in size to those of man, and in some cases it may be very difficult, if not impossible, to identify positively the blood corpuscles as human. Speaking of the microscopic test, a recognized authority says:

"Under favorable circumstances, it can always be determined whether the blood is mammalian or oviparous, and if the blood is mammalian, and the cells have an average diameter of between 1/3300 and 1/3100 of an inch, the blood is not that of a cat, goat, pig, sheep, horse, or ox, but may be the blood of a dog, guinea-pig, rabbit, or man. Most experts agree, however, that one is not justified in saying that the blood is human blood." [10]

In the human species the average diameter of the red corpuscles is 1/3200 of an inch. This measurement is not, however, a fixed constant, and variations in size are found from 1/2800 of an inch to 1/4000 of an inch.

In determining the size of the corpuscles, a skilled operator measures, with a micrometer attachment to the microscope, a large number of the observed corpuscles and then takes their average size.

Spectroscopic Test. The fact that blood is present may

[10] Wh. & St., Vol. 2, p. 696.

also be proven by the spectroscope. The principle of the spectroscopic test depends upon the fact that different solutions absorb different parts of the spectrum, and produce certain dark lines, known as "absorption lines", in the spectrum band. If the solution containing the suspected blood is placed in front of the slit of the spectroscope and the spectrum then examined, the dark lines, if the solution contains hæmoglobin, the coloring-matter of blood, will be found in certain fixed places, no other substance giving exactly the same result. A skilled operator is required to determine successfully this test, and while the test proves the presence of blood, it throws no light upon the question whether it is human blood or that of some other animal.

Serum Test. During the past few years, discoveries in connection with the investigation of certain anti-toxins have furnished a most valuable test for human blood by means of what is known as the biological or serum test. It has been found that if a small quantity of any kind of blood or blood-serum is injected into the body of another animal (a rabbit is generally used), and after a time the animal so injected is bled, and the blood allowed to coagulate, the serum thus obtained contains a constituent called "precipitin", which will produce a precipitate in the diluted blood or blood-serum of an animal of the same species as the one with which the animal (the rabbit) was inoculated. It will not, however, precipitate the blood-serum of any other kind of animal unless it be closely allied in genus. Thus, if human blood-serum was used to inject the rabbit, the resulting serum will precipitate nothing but human blood. Consequently, if an unknown blood solution is used, and the precipitin thus procured precipitates blood known to be human, the test proves the originally unknown solution to contain human blood. This test is very delicate, and can be used for fresh blood or for old and dried stains.

The nature and condition of the blood should also be noted. The fact of its coagulation may be in some instances a valuable item, since the time required for the coagulation of human blood differs from the time required for the blood

of other animals to coagulate. Certain conditions, moreover, retard or prevent coagulation as, for example, exposure to cold. Whether or not the blood is thoroughly dry may also be important for showing the time it has been exposed to the air. Generally from one to two hours is required for a single drop of blood to dry.[11]

Additional Hints as to Bloodstains. In many cases, important evidence may be obtained, where blood has spattered the surrounding walls or other surfaces, by observing the shape and form of the stains which will often serve to show from what direction the blood came. Contact with oily or greasy substances will delay the coagulation of blood. If blood is cooled rapidly to the freezing point, coagulation will not take place for an hour or so. Usually, the coagulation of human blood is complete in from nine to ten minutes.[12]

§ 13. Microscopic Examination of Hairs. The microscopic examination of hairs may furnish incriminating evidence. An illustrative case is that of a murder which was proven from the fact that upon a knife-blade were found the hairs of a squirrel, which was connected with the fact that the child victim of the homicide, whose throat had been cut, had worn about her neck, at the time, a tippet of squirrel's fur over which the knife must have passed.[13]

Not only may human hairs be distinguished from the hairs of many other animals, but the hair of a man may often be distinguished from the hair of a woman, the latter being, as a rule, smaller in diameter. The part of the body from which the examined hairs came may be detected likewise, at times, by their characteristic appearances and by their diameters. Human hairs cannot, however, be identified as the hair of a particular individual.

The domestic animals whose hairs approach most nearly in structure those from man are the dog and cow; yet the distinction is rarely difficult to one familiar with them all.[14]

[11] P. & H., Vol. 2, p. 725.
[12] *Idem*, 724.
[13] Wh. & St., Vol. 3, p. 244.
[14] P. & H., Vol. 2, p. 766.

CHAPTER III

TOXICOLOGY

§ 14. Definition. Toxicology is the science that treats of poisons, their origin, properties, and action on the system, the treatment of their noxious effects, and their detection by chemical or other means.

§ 15. What Is a Poison. An exact definition of a "poison" is exceedingly difficult, and when definitions are attempted they often prove misleading, and are also often scientifically criticizable. Dr. Taylor defines a poison as follows:

"A poison is a subsance which, when absorbed into the blood, is capable of seriously affecting health or destroying life, and this is its usual effect upon the healthy body."[1]

Some poisons, however, like corrosive acids and alkalies, cause deleterious results without being absorbed into the blood, and to meet this objection the following definition has been given:

"A poison is anything which otherwise than by the agency of heat or electricity is capable of destroying life, either by chemical action on the tissues of the living body, or by physiological action from absorption into the living system."

Other authorities object to all definitions, and hold that the use of definite words or phrases to restrict or comprise a schedule of poisons, especially when we consider the constantly advancing progress of the science of toxicology, is unadvisable as a medico-legal requirement. To avoid quibbling over the technical definition of a poison, some of the statutes provide, in the criminal law, against the administering of poison, "or other noxious or destructible thing".

[1] Taylor on Poisons 18.

§ 16. Whether Quantity Is Test. The quantity of the substance required to destroy life is not the test of a poison. Half a grain of strychnine may cause death, while sixty grains of oxalic acid are required to occasion fatal results. In a general sense, however, a substance to be regarded as a poison must be capable of producing harmful results in doses of about sixty grains, if a solid, or a teaspoonful, if a liquid.[2]

§ 17. How Administered. A poison may be administered in various ways. It may be administered by another, or taken personally by the victim. It may be swallowed, hypodermically injected, applied to the nose or lungs (as inhalation of poisonous vapors), ear, vagina, rectum, or even to the skin. The sound skin may absorb arsenic, corrosive sublimate, and opium. If applied to the broken skin the absorption is much more rapid.

§ 18. Classification of Poisons. *Physiological.* The classification of poisons is attended with much difficulty, and the authorities are not agreed as to the system to be followed. It should also be obvious that attempts to classify poisons must necessarily vary as scientific knowledge increases. It has been the usual practice to classify poisons upon the basis of their physiological action, and to refer to them as corrosives, irritants, and neurotics. The action of a poison is physiological or chemical, but not mechanical. Noxious things that act mechanically, such as powdered glass, pins, needles, etc., although they may be administered internally, and although they may destroy life, are not poisons but are properly classed as "destructive things".

Corrosive poisons act locally, and are characterized by destruction of the tissues with which they come in contact. Irritants produce an irritant action upon the mucous coat of the alimentary canal (gastro-intestinal irritation). Some irritants, however, are also corrosives by reason of their destructive chemical action upon the tissues. Neurotics affect the nerve centers, the brain and spinal cord, pro-

[2] P. & H., Vol. 2, p. 301.

ducing coma, convulsions, disordered circulation, and respiration. The classification of poisons by these physiological actions may be shown in part by the following tabulation:

CORROSIVES: Strong acids and alkalies.

IRRITANTS: Arsenic, antimony, mercury, phosphorus, bromine, iodine, cantharides, savin, croton oil.

NEUROTICS: Alcohol, chloral, chloroform, opium, belladonna, aconite, strychnine, carbon monoxide, hydrocyanic acid, carbolic acid.

Chemical. Instead of classifying poisons by their physiological action, a classification based upon their chemical and physical properties is preferred by some toxicologists.[3] This system of classification is illustrated by the following partial outlines:

GASEOUS: Carbon dioxide, carbon monoxide, sulphide of hydrogen, nitrous oxide.

INORGANIC: Sulphuric, hydrochloric, and nitric acids, antimony, arsenic, phosphorus, mercury, bismuth, lead and its salts, salts of copper.

ORGANIC:
(1) Non-Alkaloidal:
Acetic acid, carbolic acid, hydrocyanic acid, oxalic acid, chloral hydrate, wood alcohol, chloroform, croton oil, digitalis, ergot, savin, tansy.
(2) Alkaloidal:
Aconite, atropine (belladonna), cocaine, nicotine, strychnine, brucine, opium and its alkaloids including morphine.

FOOD POISONING: Ptomaines, toxines, leucomaines.

§ 19. Local and Remote Action of Poisons. Experts speak of the local and remote action of poisons. By local action is meant direct action upon that local part of the body to which the poison is applied, as corrosion of the stomach and bowels produced by strong acids and caustic

[3] W. & St., Vol. 2, p. 105 *et seq.*

alkalies. Arsenic produces a local inflammation. Chloroform causes local action on the nerves, and belladonna on the muscles.

Remote action extends to organs distant from the point of application. The usual symptoms of poisoning are produced, generally, by remote action. Some poisons remotely affect the heart (as digitalis), some the organs of respiration (as hydrocyanic acid), some the brain (as opium, morphine), and some the spinal cord (strychnia).

§ 20. **Symptoms of Poisoning.** In the medico-legal investigation of cases of poisoning the symptoms are important in determining the nature of the poison. Although these symptoms greatly vary, nevertheless, many are specifically characteristic. Corrosive poisons, such as strong mineral acids, caustic alkalies, strong solutions of oxalic acid, corrosive sublimate, chlorides of antimony, etc., produce burning pains in the mouth, throat, and stomach. Vomiting and purging follow, and blood is discharged, pure or mixed. In case of corrosive poisons the symptoms are usually immediate, while in the case of irritant poisons there may be considerable delay in their appearance. The insolubility of the poison in water or other liquids will retard the action. After a time, however, there is intense pain and dryness of the throat, great thirst, nausea, vomiting, pain in the abdomen, purging, bloody discharges, cold sweats, and pain in the region of the kidneys. The sufferer is generally sensible to the last.

In opium poisoning the usual symptoms are giddiness, headache, protrusion of the eyes, contraction of the pupils, noises in the ears, drowsiness, insensibility. Vomiting is rare.

The symptoms generally associated with poisoning by belladonna, stramonium, or hyocyamus are delirium, thirst, great dryness of the throat, and dilated pupils. Death is generally preceded by coma (stupor), rarely by convulsions.

The characteristic symptoms of strychnine are violent and rigid convulsions, closely locked jaws, great physical suffering. In the case of hydrocyanic or prussic acid death

is caused quickly by shock and the action is too rapid for characteristic symptoms.

Symptoms Simulated by Disease. It is always important to bear in mind that there are certain diseases whose symptoms may be mistaken for those of poisoning. Thus, the symptoms of gastro-enteritis complicated with acute nephritis closely resemble the symptoms of poisoning by irritants, as do also cholera morbus, peritonitis, and ulceration of the stomach. Narcotic poisoning may be simulated by apoplexy, epilepsy, tetanus, and inflammation of the brain. The cautious investigator will make careful inquiry as to the existence of such diseases, before unjust suspicion is aroused while, on the other hand, a post-mortem examination will generally show whether such a disease was the cause of death.

Action and Symptoms Modified by Circumstances. There are many circumstances and conditions which either alone or in combination may modify the action and the symptoms of poisons. The length of time required for depositing absorbed poisons in the organs or tissues varies not only with different poisons but also, in case of the same poison, with the condition of the system. The condition of the health of the person is often a very important matter. Some diseases seem to make a patient immune to certain poisons, and some mysterious cause may enable an individual in good health to take an ordinarily fatal dose of poison without any apparently injurious consequences. The habits of the person often affect the question as witnessed, for example, in the case of confirmed morphine eaters. Moreover, other circumstances, such as the quantity of the poison taken, the age of the person, the food with which it may be mixed, and the combining of two or more poisons may also present serious and important problems in connection with the medico-legal investigation.

§ 21. Ptomaines. There is a class of bodies, known as ptomaines, that are formed from the decay of organic substances, being produced by the action of certain bacteria upon proteid material. They are developed, as a rule, from

contaminated milk or cheese, or from meats, fish, sausage, and canned vegetables, which have begun to decompose.[4] Usually, the ptomaines are formed in the early stages of decomposition and they may have disappeared from material that is putrid, in consequence rendering such material harmless.[5]

The ptomaines strongly resemble the vegetable alkaloids in their chemical and in their physiological action, and while all ptomaines are not necessarily poisonous, yet some of them are very poisonous, and the symptoms resulting from ptomaine-poisoning may be confounded with the symptoms resulting from alleged homicidal poisoning by one of the vegetable alkaloids.

In the present state of toxicological science, great caution is necessary in distinguishing, therefore, certain alkaloidal poisons from certain ptomaines. For example, the chemical tests of color-reactions for certain vegetable alkaloids may be simulated so closely by certain ptomaine products that, by means of the color-test alone, it becomes impossible to distinguish them. In most cases, however, the chemist by delicate processes may separate the ptomaines from the alkaloids, if both be present, and thereupon may test the latter independently.[6]

§ 22. Post-Mortem Examinations. The limited space of this article permits only a brief reference to some of the most important matters connected with the investigation after death of cases of suspected poisoning. If the body is exhumed, the condition of the coffin should be noted, and it may be a wise precaution to collect some of the soil around the coffin for the purpose of analysis to guard against the possibility of the body's absorbing certain poisons from the earth. The body should be identified, and all parts necessary for the chemical analysis should be removed. It is a mistake to suppose the stomach alone is sufficient for such analysis. The bowels, kidneys, and liver

[4] P. & H., Vol. 2, p. 679.
[5] W. & St., Vol. 2, p. 675.
[6] P. & H., Vol. 2, pp. 337, 691-707.

should in all cases be removed. Poisons generally locate themselves in the liver.

It is also a wise precaution, in most cases, to preserve the brain, spinal cord, heart, urine found in the bladder, and some of the blood. In case of death from suspected chloroform, or other anesthetic, the lungs should be removed for examination. The chemical analysis of vomited matter and of the medicines given to the patient is also in many cases an important step if such material is obtainable.[7]

§ 23. Chemical Analysis. The chemist should be prepared to testify to the absolute purity of all chemicals used by him in conducting his analysis, and to the scrupulous cleanliness of all jars, vessels, and apparatus. He should know these facts from his own personal tests and should not rely upon the guaranties of dealers that his reagents are "chemically pure". The material received for analysis should be placed in separate jars. The jars should be sealed and kept under lock and key.

A "blank-test" is usually made by the chemist before the analysis proper. This usually consists of testing an artificial mixture of food, or part of the liver of some lower animal (usually a calf), the weight of the "blank" being equal to the weight of the organ to be examined, and the chemicals used being in the same proportion as in the final test. If this result shows no poison present, the purity of the chemicals will be demonstrated, and the actual test may thereupon be made. If the body was embalmed, the ingredients of the embalming fluid must be ascertained.

§ 24. Other Examinations. In some cases a microscopic examination of the tissues by a skilled pathologist may prove of great value as evidence, and a bacteriological examination of the bowels may also be important in cases of suspected poisoning attended with intestinal symptoms.

§ 25. Preparation for Trial. In order intelligently to examine witnesses, either on the direct or cross-examination, in cases of alleged poisoning, the practitioner will find it necessary to prepare himself as thoroughly as possible

[7] *Idem*, 315, 316, 319.

by studying the latest authorities upon the alleged poison or poisons and, if possible, by consulting with a competent chemist and physician. The symptoms produced by such alleged poisons, and the particular tests employed for their determination both qualitatively and quantitatively, suggest the field to be explored.

§ 26. **Poisons Introduced after Death.** Embalming fluids may contain certain poisons as, for example, arsenic and corrosive sublimate, and experiments have shown that even after death arsenic and other crystalline poisons will diffuse through animal tissue, and even into the bladder and the urine.[8] Under such circumstances it would be impossible to prove, by the chemical analysis, that death had been caused by the administering of arsenic. For this reason, some States, Michigan for instance, prohibit by statute the use of arsenic in embalming.

§ 27. **Masking Poisons.** The skillful mixing of poisons by crafty criminals, in order that by such combination their action upon the human system may be altered and masked, and that the characteristic symptoms of either one of the poisons when used alone may be concealed, and that, after death, their discovery by the usual chemical tests may be prevented, at times presents questions of great importance.[9]

The skilled toxicologist will, however, conduct his analysis in such suspected cases with a full realization of such possibilities. The expert upon symptoms will, likewise, keep in mind the fact that the symptoms must necessarily be influenced by the rules which govern the action of only one poison, or the action of two or more of them in combination.[10]

[8] *Idem*, 708, 721.

[9] Reese, Med. Juris. 184.

[10] Wh. & St., Vol. 2, p. 99,

CHAPTER IV

LEGITIMACY

§ 28. Questions Involved. Questions relating to legitimate birth involve problems that require for their solution some scientific knowledge. Among them are such matters as the duration of pregnancy, the viability of the child, the sexual capacity of the husband or wife, child substitution, superfetation, and posthumous birth. Although there are other legal questions involving a consideration of these same subjects as, for example, the subject of impotency as a ground for divorce, nevertheless, they may be conveniently treated in connection with questions of legitimacy.[1]

§ 29. Presumption of Legitimacy. The law presumes the legitimacy of children born in wedlock, no matter how soon after the marriage, or born within a competent time after the divorce of the parents, or after the death of the husband, but this presumption may be rebutted by proof of the impotency of the husband, or by proof of the separation of husband and wife throughout the entire possible period of gestation, or by proof showing that the alleged husband had no access to the wife.[2]

§ 30. Period of Gestation. As to the period of human gestation there is no absolute physiological law upon the subject. The usual period is nine calendar months, or ten lunar months, forty weeks, or about 280 days. A recognized authority in summing up the recorded cases, places the normal period of gestation from 275 to 282 days from the end of the last menses.[3] It is, moreover, agreed by all the authorities that the period may be prolonged to 300 days, and many, although admitting that such protracted

[1] Wright v. Hicks, 12 Ga. 155, 56 Am. Dec. 451; Scanlon v. Walshe, 81 Md. 118, 31 Atl. 498; Cross v. Cross, 3 Paige (N. Y.) 139, 23 Am. Dec. 778.

[2] Wh. & St., Vol. 3, § 66.

[3] Reese, Med. Juris. 498.

periods are exceedingly rare, place the limit even beyond.[4] There are, also, individual cases reported by physicians, some of them ranging as high as 348 days.[5]

By the common law of England and of this country no positive time is fixed for gestation, but in Scotland, France, and Italy, if the pregnancy exceeds 300 days after the death of the husband, legitimacy is denied. In Germany, 302 days is prescribed by statute.

§ 31. Premature Birth. Premature delivery is also an important question in the matter of legitimacy. Cases involving the rights of claimants of inheritances may arise, where the evidence shows that the claimant was born within four, five, six, or seven months after the return of the husband of the mother from an absence of years. Is it possible that the husband could have been the father of the child? This question involves the doctrine of viability, or the earliest period at which a child may be born and survive.

§ 32. Viability. A child is said to be viable—from the French, *vie,* Latin, *vita,* meaning life—when it is capable of maintaining an existence after birth. Viability is of importance from two aspects: one with respect to infanticide, and the other with respect to the inheritance rights of legitimate children. The child, to be viable, must possess the organs essential to life, and such organs must be sufficiently developed so that it is physiologically possible for its life to continue. In some extreme cases children may survive if born as early as between the fifth and sixth month of gestation yet, as a rule, a child is not viable until the seventh month, or not before 180 days.

Live birth, however, should be distinguished from viable birth, since a child may be born alive and yet not be capable of surviving. Cases are known where infants born as early as in the fourth month of gestation have lived for a short time. A live birth, even if not viable, will support a tenancy by curtesy.[6] A child born after death of the mother (as by Cæsarian operation, Cæsar, according to tradition,

[4] Wh. & St., Vol. 3, § 66.
[5] P. & H., Vol. 2, p. 70.
[6] Marsellis v. Thalhimer, 2 Paige (N. Y.) 35.

having been born in this way,) is legitimate, but not capable of establishing tenancy by curtesy which requires issue born during the life of the mother.

It results from the foregoing facts that if a woman gives birth to a viable child, it is evident that it must have been conceived at least six or seven months before its birth. This is the positive rule of the civil law, under which children born within the first six months after conception are considered as incapable of living.

§ 33. Child's Resemblance to Reputed Father. That the child resembles the reputed father may be shown in evidence, and where a mulatto child is born to a woman of the white race, whose husband is also of the white race, it is competent to show by the testimony of scientific experts that it is contrary to the laws of nature for both of the parents of a mulatto to be of the white race.[7]

§ 34. Impotency. The question of impotency may arise in several ways. Impotency of the husband may be proof of the bastardy of the child of the wife. Impotency in either spouse may be a ground for annulment of marriage, or for divorce. Impotency may also be a defense in rape. Generally, the term "impotency" is applied to the male, but it is properly used for both sexes. Either party, moreover, may be sterile without being impotent. Impotency as a ground for divorce or annulment of marriage must exist at the time of the marriage, and must be incurable.[8] Impotency, in the law of marriage and divorce, means an inability to perform the sexual act, and is to be distinguished from sterility which implies non-procreative power. In the law of legitimacy impotence obviously includes both impotence proper and sterility.

Puberty in the human family generally commences at fourteen years in males and at twelve in females, although there are many exceptions to this general rule.

[7] Bullock v. Knox, 96 Ala. 195, 11 So. 339; Cross v. Cross, 3 Paige (N. Y.) 139, 23 Am. Dec. 778; Watkins v. Carlton, 10 Leigh (Va.) 560; Head v. Head, 1 Sim. & St. 150.

[8] Lorenz v. Lorenz, 93 Ill. 377; Powell v. Powell, 18 Kan. 371; G. v. G., 33 Md. 401, 3 Am. Rep. 183.

CHAPTER V

SEXUAL CRIMES

§ 35. Scope of Inquiry. The questions to be considered in the following paragraphs are those that pertain to certain crimes known as sexual, or the crimes of rape and sodomy. The purely legal aspects of such crimes are treated elsewhere in this work.

§ 36. Rape. In the crime of rape the physical condition of the complainant may be shown either in corroboration or in contradiction of her testimony. It is desirable that the examination should be made as soon as possible after the alleged assault, since in most cases the marks of violence will be obscured or obliterated after nine or ten days.

§ 37. False Accusation. Not only does it sometimes happen that the most unfounded accusations of rape, based upon the vilest motives of blackmail, or of revenge, are made by designing women, but also, as well known to medical jurists, cases are found where women of highest personal character, acting under the influence of hallucinations and delusions, have mistakenly preferred such charges, the absolute falseness of which have been, in some cases, fully demonstrated. These latter cases require the investigation of experts on mental diseases, and whether charges by a female patient against her physician are the result of hallucination influenced by drugs is a question, also, of expert evidence.

§ 38. Remoteness of Examination. That the time of the examination was remote does not, as a rule, affect the admissibility of such evidence, although it does affect its probative force. Evidence as to such examinations has been admitted where the examination was made months, and even for more than a year after the alleged crime was

committed.[1] Relative to the admission of evidence of examinations, the reader is referred to the cases cited below.[2]

§ 39. **Sodomy.** The term sodomy, derived from the name of the ancient city of Sodom, signifies "the unnatural crime" or "the crime against nature,[3] and includes unnatural connection of man with woman, of man with man, or of man and woman with the lower animals. Such crimes are not very common and are here dismissed without discussion.[4]

[1] Com. v. Allen, 135 Pa. 483, 19 Atl. 957.

[2] State v. Teipner, 36 Minn. 535, 32 N. W. 678; State v. Watson, 81 Iowa 380, 46 N. W. 868; Gonzales v. State, 32 Tex. Crim. Rep. 611, 25 S. W. 781; Com. v. Allen, 135 Pa. 483, 19 A. 957; State v. Evans, 138 Mo. 116, 39 S. W. 462.

[3] Lev. XVIII, 22; XX, 13; Deut. XXIII, 17.

[4] The following cases may be consulted for further information: Bradford v. State, 104 Ala. 68, 16 So. 107, 53 Am. St. Rep. 24; Cross v. State, 17 Tex. App. 476; Herring v. State, 119 Ga. 709, 46 S. E. 876.

CHAPTER VI

PREGNANCY

§ 40. Legal Questions. The existence of pregnancy is another of the possible medico-legal questions that may at times prove to be of great importance. For example, pregnancy at the time of marriage may be a ground for divorce; in an action for seduction, pregnancy may be alleged as a basis of increased damages; the question may arise in an action for malpractice alleging a wrong diagnosis; in criminal prosecutions for procuring the abortion of "a woman pregnant with child", the fact of pregnancy may be essential; in matters of inheritance a woman may claim to be pregnant with an heir to an estate; and pregnancy of a woman under sentence of death may be pleaded to postpone execution of the sentence.

§ 41. Jury of Matrons. A woman under sentence of death may plead her pregnancy in order to obtain a reprieve. By the common law the court in such a case directs "a jury of twelve matrons or discreet women" to inquire into the fact. In civil cases where, for example, a widow was suspected of feigning pregnancy in order to produce a supposititious heir to the estate, the heir-presumptive could sue out the writ *de ventre inspiciendo,* which directed that in the presence of knights and women the female should be examined.[1] The absurdity of committing such a question to persons having no expert knowledge of the subject is apparent. Under modern practice the fact would be determined by medical examiners.

§ 42. Abortion. *Definition.* Abortion, or miscarriage, in medical science, signifies the expulsion of the fetus before the sixth month of gestation, or before it is considered viable, premature labor being the term applied to natural

[1] See Bl. Comm., Vol. 1, p. 456; Vol. 4, p. 394.

delivery after this period but before the full term.[2] In law, while no such distinction is made, nevertheless abortion does not necessarily impute a crime. Abortion frequently arises from physical weakness, either constitutional or temporary, and may result from many natural causes, such as disease, bodily injury, or nervous shock. The causing or the procuring of an abortion is, moreover, not necessarily criminal, since it may be necessary for the preservation of a woman's life.

Criminal Abortion. At common law, abortion is the intentional and unlawful causing or procuring of the miscarriage or premature delivery of a woman quick with child. The intent is the gravamen of the offense, and this may be shown by the drugs or instruments used, and by other ways.

Quick with Child. While it is, undoubtedly, the common-law rule that the woman must be quick with child,[3] yet some jurisdictions have held that it is not essential that the child should have quickened,[4] it being said in a Pennsylvania case that it is not the killing of a living child which constitutes the offense, but the destruction of gestation by wicked means and against nature.[5] Some of the statutes, moreover, provide that abortion may be committed upon "any pregnant woman". The doctrine of "quickening" is due to the ancient error that life did not actually begin till the period of quickening.

Means of Producing Abortion. The means of procuring abortion are, generally, of three kinds, namely, drugs, force, and instruments. Competent authorities estimate that fifty per cent of the cases of criminal abortion prove fatal. At common law the death of the mother from criminal abortion is murder.[6]

[2] Reese, Med. Juris.

[3] Com. v. Parker, 50 Mass. 263; Mitchell v. Com., 78 Ky. 204; State v. Cooper, 22 N. J. L. 52.

[4] State v. Slagle, 83 N. C. 630; Wilson v. Ohio, 2 Ohio St. 319; Mills v. Com., 13 Pa. St. 630.

[5] Mills v. Com., *supra.*

[6] Hale, 1 Pl. of Crown 430; 4 Bl. Com. 201; Com. v. Parker, 50 Mass. 263.

Medical Evidence. Medical experts may testify whether or not in their opinion, from examination of the woman, an abortion has been performed. They may also give their opinions as to the cause of the abortion, also whether there was any possibility that it may have been performed by the woman herself. Surgical instruments adapted for producing abortion, found in possession of the accused, may be put in evidence,[7] and experts may testify concerning the character of such instruments.

[7] Com. v. Brown, 121 Mass. 69.

CHAPTER VII

INFANTICIDE

Infanticide, or the criminal destruction of the new-born child, is not a separate, specific crime, since it is a phase of murder. It is essential, however, that the child be completely born, and also that it be born alive, and the burden is upon the prosecution to establish both of these facts. The child must also have manifested some sign of life. The crying of the child is said to be the strongest evidence of the fact of life, yet it is not necessary evidence. Any slight movement, such as the twitching of a muscle, is sufficient to predicate life. Neither is it necessary to prove that the child breathed, in order to establish a live birth, since a child may be alive and have an existence independent of its mother although respiration may not be established.[1] Moreover, the fact of respiration, if proven, although conclusively showing that the child had lived, does not necessarily prove that it was alive when completely born.

It has been repeatedly said that "the law presumes that every child is born into the world dead".[2] This is error; the correct view being that whereas felonious homicide is the killing of a "human being", one of the essential elements of the crime is the fact that there was a "human being", a human creature with an independent existence, and the burden of establishing this fact, as of all essential facts, is upon the prosecution.

§ 43. Criminal Causes of Death. The usual causes of death in infanticide are, generally, suffocation, strangulation, drowning, punctured wounds made, for example, with

[1] Reese, Med. Juris. 503; Rex. v. Brain, 6 C. & P. 349; Archbold, Crim. Plead. 367.

[2] Reese, Med. Jur. 455.

a pin, needle, or other sharp instrument in the fontanelles or between the vertebrae.

§ 44. **Accidental Causes of Death.** It should always be remembered that the accidental causes of death in newborn children are many. Moreover, many children are born dead—one in every eighteen or twenty, it is said.[3]

[3] Taylor; Reese.

CHAPTER VIII

WOUNDS

§ 45. Legal Importance. The subject of wounds is often of importance from a medico-legal point of view, but only the briefest reference to it is possible in this article. The word "wound" found in statutes relating to crimes, and such terms as "mortal wound", and "dangerous wound" will suggest the practical bearing of the topic. In particular instances, the nature and extent of a wound, its size, length, depth, direction, the number of wounds, whether or not a wound was mortal, whether it was inflicted during the life or made after death, whether it was accidental, suicidal, or inflicted by another, may be of vital importance in the theory of a case.

§ 46. Surgical Classification. Surgeons usually classify wounds as open or subcutaneous, the former including punctured, incised, lacerated, or gun-shot wounds, while subcutaneous wounds include contusions (where the skin is not broken), sprains, dislocations, fractures of bones, or the rupture of internal organs. The scientific knowledge of wounds is a broad subject, and there are experts upon special branches of wounds as, for example, gun-shot wounds.

§ 47. Surgical Definitions. Punctured wounds are made by the penetration of some pointed instrument, weapon, or other substance. Incised wounds are cuts, "a solution of continuity without loss of substance." Lacerated wounds are torn or ragged wounds, produced by sawing movements of blunt or jagged instruments, or by hacking. Contused wounds are accompanied with considerable bruising, a discoloration of the surrounding skin caused by the effusion of blood from small ruptured capillaries, the discoloration being known as ecchymosis. Mixed wounds combine the

characteristics of two or more wounds, as often illustrated in gun-shot wounds.

§ 48. **Legal Definition.** The legal definition of a wound is not identical with the surgical definition since, in law, a wound embraces all bodily injuries whether external or internal, with or without a solution of continuity. In the legal sense, a wound is any lesion of the body, whether cut, bruise, contusion, fracture, dislocation, or burn.[1]

A wound has been further defined as "where the violence is so great as to draw blood, by striking or stabbing with a sword, knife, or other instrument, or by shooting, or by striking with a cudgel, the fist, or the like. It includes incised, punctured, lacerated, contused, or gun-shot wounds".[2]

§ 49. **Practical Hints.** Wounds inflicted before or after death may be distinguished by experts by the characteristic edges, for example, incised wounds; also by evidence of the presence or absence of hemorrhage, inflammation of the surrounding parts, suppuration, etc. Gun-shot wounds differ much in appearance according to the distance from which the weapon was fired, the nature of the bullet or other projectile, the caliber of the weapon, and the course of the bullet. The evidence of powder marks upon the body is often important in determining the distance of the firing. The direction of the wound, and its nature, are also of great value in questions of suicide. An important part of the evidence, in some cases, is the examination of the clothes of the deceased, since this may reveal the mode in which the wound was made.

[1] Whart., Law Lexicon.

[2] Archbold, Crim. Plead. (15th ed.) 567, 572.

CHAPTER IX

QUESTIONS OF IDENTITY

§ 50. Mistakes as to Identity. One of the most difficult problems with which courts have to deal is the question of the identification of living persons, and there is no one of mature years who has not experienced the fact that it is very easy to be mistaken in the supposed recognition of an individual. Many persons are very positive, however, in their assertions of identity, and will in good faith testify in such cases with absolute certainty, when in fact they are laboring under the greatest mistakes. Owing to mistaken identity innocent persons have suffered death for crimes committed by others, and in civil cases there have been many notorious illustrations of similar error. In the famous Tichborne claimant case in England, eighty-five witnesses, including the real Sir Roger Tichborne's own mother, positively swore that the fraudulent claimant was Sir Roger. Moreover, witnesses equally honest will testify to the most contradictory statements relative to the description of persons, such as the size, height, complexion, color of hair, clothing, etc.

§ 51. Some Facts of Vision. There are certain scientific facts relating to vision that are of great importance in some questions of identity. In the first place, acuteness of vision depends largely upon the age of the individual, conditions of weather, and the time of the day. Experiments in physics have demonstrated that even persons best known to an observer can be recognized by him, in broad daylight, at an average maximum distance of 109 yards. Even then, the recognition is difficult in many cases. Persons but slightly known can be trustworthily identified not more than twenty-seven to thirty-three yards away, and persons seen for the first time cannot be clearly discerned

for future identification if distant more than from sixteen to twenty-two yards. By moonlight, a distance of seventeen yards is the limit at which the best-known individuals can be identified, and by starlight the features of persons intimately known cannot be discerned beyond ten to thirteen feet.

Further experiments have established the fact that the flash of a gun or pistol, fired in the nighttime, may reveal to one sufficiently near the features of the person discharging the weapon.[1] A flash of lightning may also disclose one's features sufficiently for identification, but the belief entertained by some that the sensation of light "seeing sparks" occasioned by a blow upon the eyes or head will enable such assailed person to see, in the night, his assailant, is mere superstition.[2]

§ 52. Identification of Dead. Where the features of the dead are unrecognizable, or are absent, the evidence of known scars, body marks, moles, peculiarities of the teeth, including the fillings, may be of great value for the purposes of identification. In young persons, the stage of development of the teeth affords important evidence in determining the age, and the skilled anatomist may, in connection with the remains of a fetus, fix the age within a few months or, in case of a young child, within a year or two, by careful examination of the points of ossification and other signs of development. In case of adult skeletons, the sex may usually be determined by the size, shape, and general contour of the bones, especially the pelvic bones. The skull may also serve to identify the race to which the dead person belonged. In the identification of separate bones, however, care is required, since cases are not wanting where the bones of lower animals have been mistaken for human bones.

[1] W. & T., For. Med. 559.

[2] *Idem*, 560.

CHAPTER X

SURVIVORSHIP

§ 53. No Presumption of Survival. By our common law, where several persons some of whom are reciprocally the heirs of each other perish in a common disaster, such as a shipwreck or fire, there is no presumption, when it cannot be ascertained by positive evidence which died first, that any particular one survived the others, but all, regardless of age, sex, or condition of health, will be presumed to have died at the same moment. In the civil law, the rule is otherwise, the presumption being that the stronger sex, the males, survived the females, and that aged persons succumbed sooner than the young and vigorous. By our common law, however, the matter of successive survivorship must be proved by facts, and one who claims by an alleged survivorship must prove the survivorship, else the right of succession will be determined upon the presumption that all died simultaneously.[1] Reese[2] says that by English law a father is presumed to survive a child under puberty, and where a mother and infant die in childbirth, that the presumption is in favor of the mother's survivorship. These are civil-law principles, however, and have no place in our English common law.

Interesting cases on this topic are Browne v. Duncan,[3] which involved the death of a husband and wife; Ehlis Estate,[4] where the question was who survived of a family that perished in a burning house, and *In re* Ridgway,[5] which arose out of the disaster to the steamer Schiller.

[1] Rex. v. Dr. Hay, 1 W. Bl. 640; Wright v. Sarmuda, 2 Phillim. 266-277; Cawman v. Rogers, 73 Md. 406; Russell v. Hallett, 23 Kan. 278; Newell v. Nichols, 75 N. Y. 86; *In re* Wilbor, 20 R. I. 126, 37 A. 634.

[2] Reese, Med. Juris. 66.

[3] 29 So. 304.

[4] 73 Wis. 445.

[5] 4 Redf. Surr. (N. Y.) 226.

CHAPTER XI

INSANITY

§ 54. Importance of Subject. No subject is of greater importance to the medical jurist than that of insanity, and considering the profound research that has been applied to this branch of medical science, especially in recent years, and the volumes that have been written upon it, attempts to epitomize it are almost hopeless. There are, however, certain fundamental principles which every lawyer should know, and these alone can be touched upon here.

§ 55. Mental Irresponsibility. To the medical expert the recognized types or forms of insanity are many, and the possible varying phases of these forms in individual cases are endless. In fact, no single comprehensive definition of insanity could be framed that would apply to all cases.

From the legal standpoint, however, all discussions concerning the peculiar forms or types of mental alienation are extraneous. The sole question when insanity is alleged in defense for crime is: Did the accused, when the act was committed, have in contemplation of law sufficient mental capacity to make him legally responsible? When the law says that insanity is a defense in a criminal prosecution, the word "insanity" is used in the legal and not in a medical sense. There are many instances of insanity as a disease that could not, considering the protection of society, be recognized by the law as constituting insanity as a defense for crime. Many persons, therefore, who may be "insane" from a medical standpoint are, nevertheless, responsible for their criminal acts. Mental disease is not a defense and, strictly speaking, insanity is not a defense but rather only such mental irresponsibility due to the idiotic or insane mind as the law recognizes as incompatible with the entertaining of a criminal intent.

§ 56. Technical Terms. For the purpose of eliciting evidence, the lawyer will often find it necessary, however, to familiarize himself with the technical terms used by various experts upon insanity. In matters of evidence, the form or type of the alleged insanity is often important since certain causes such as disease, accidents, shocks, trouble, excitement, occupation, excesses, privations, and heredity, may be more pertinently shown for some forms of insanity than for others. Moreover, certain words, terms, and phrases used in connection with mental alienation have received judicial recognition.

Idiots. An idiot is one whose reason has never developed. This does not necessarily mean fatuity from birth, as sometimes said by law writers and courts, since idiocy may be due to lack of brain development in early life.

Lunatics. A lunatic is one who has lost his reason. The term is often applied to one who has periods of insanity, and who otherwise enjoys "lucid intervals".

Irresistible Impulse. An irresistible impulse, connected with what is known as impulsive insanity, is a feeling that regardless of consequences the act must be done, and which the will is unable to prevent or control.

Moral Insanity. Moral insanity, sometimes called "emotional insanity", is a term applied to moral degenerates or those persons whose moral natures are exceedingly depraved or perverted.

Hallucinations. Hallucinations are erroneous perceptions evolved from the brain itself, and not depending upon external objects. In hallucinations, therefore, the object is not present.

Illusions. An illusion is a "false interpretation of an external object". The object is present but erroneously perceived.

Delusions. Delusions are conceptions based upon the false perceptions of hallucinations or illusions, or are the result of false reasoning. Hallucinations, illusions, and consequently delusions are the possible experience of all persons—the sane as well as the insane. Therefore,

it is in the character, nature, and quality of the delusions that the insane mind is most frequently determined. It is owing to the fact that delusions may exist in either the sane or the insane mind that the phrase "insane delusion" has been coined. The expression is criticizable, but it has become fixed in legal nomenclature. In Guiteau's case it is said:

"The insane delusion, according to all testimony, seems to be an unreasoning and incorrigible belief in the existence of facts which are either impossible absolutely or at least impossible under the circumstances of the individual."

Paranoia. Paranoia is usually a degenerative and congenital mental disease. It is characterized by delusions of a fixed and systematic character. The delusion may assume the form of a command from God to do a particular act. "The cases of Oxford, Guiteau, and Prendergast are striking examples" of these types.[1]

The prevailing form of paranoia is accompanied by delusions of persecution or of grandeur. The patient may imagine himself to be some great personage, or the delusion may take the form of being engaged in great lawsuits (litigious paranoia), or of being the object of love of the opposite sex (erotic paranoia).

Epileptic Insanity. Epileptic insanity is that form of mental disease found in connection with the convulsive nerve disease known as epilepsy. As a criminal defense the fact that the accused has at some time suffered from epilepsy is very common. Delusions may precede or follow attacks, and the most frenzied mania may be the result. A mental unbalance may also occur preceding or following the attacks, the disease in such cases being known as "masked epilepsy".

Hysterical Insanity. Hysterical insanity, generally found among young girls and women, is connected with hysteria, a functional disturbance of the whole nervous system. It is associated with impulsive insanity, and is

[1] Witt & Beck., Med. Juris.

sometimes found in cases of young women who make false accusations of assault.

Organic Psychoses. Psychosis signifies mental disease. Organic psychoses include those forms or types that show organic impairment, such as lesions of the brain, its membranes, or changes in tissue. In such cases a post-mortem examination, especially by aid of the microscope, affords in connection with diagnostic symptoms indisputable evidence of insanity.

§ 57. **Presumption of Sanity.** Sanity is always presumed until the contrary appears. It is, therefore, never incumbent upon the prosecution to introduce any evidence in proof of sanity until insanity has been alleged in defense, and some evidence thereto has been introduced by the accused. Where one has been adjudged insane by a legal inquest the presumption of insanity may continue until rebutted by evidence of sanity.

§ 58. **Legal Tests of Insanity.** The early writers upon the law of crimes lend us no aid in satisfactorily determining the legal tests of mental irresponsibility. They wrote in a crude age of medical knowledge, and in a still cruder age of popular superstition and prejudice. A few centuries ago it seems that insanity did not warrant a verdict of "not guilty", but upon the rendering of a special verdict the king granted a pardon.[2] Fitz Herbert says:

"He who shall be said to be a sot and idiot from his birth is such a person who cannot account or number twenty pence, nor can tell who was his father or mother, nor how old he is."[3]

Hale quaintly says concerning these tests: "These may be too narrow grounds."[4]

Coke and Hale speak but briefly upon the subject, and Blackstone merely says that idiots and lunatics are to be excused from the guilt of crimes, providing it be "a total

[2] See Fitz Herbert, Cor. 351.
[3] Fitz Herbert, N. B. 532.
[4] Pl. of Crown c. 4.

idiocy, or absolute insanity'' the distinction being made, as by Hale, between total and partial insanity. Hawkins, who wrote forty years before Blackstone, while devoting but three lines to the subject uses, nevertheless, a phrase which none of his predecessors employs, and yet one which is substantially found in every textbook of today. He says:

''Those who are under a natural disability of distinguishing between good and evil, as infants under the age of discretion, idiots, and lunatics, are not punishable by any criminal prosecution whatsoever.''

McNaghten's Case. The case generally cited as the leading case upon the subject is McNaghten's case which was tried in 1843. McNaghten was tried in London for the murder of Mr. Drummond, private secretary of Sir Robert Peel. The prisoner intended to kill Sir Robert but mistook Mr. Drummond for the intended victim. The accused was acquitted on the ground of insanity. Due to the excitement aroused by the acquittal, the House of Lords submitted a series of questions to the English judges. The opinion given by fourteen of the fifteen judges of England, in reply to one of the questions, was substantially as follows:

To establish a defense on the ground of insanity, it must be clearly proved that at the time of committing the act the accused was laboring under such a defect of reason from disease of the mind as not to know the nature and quality of the act he was doing, or if he did know it that he did not know he was doing what was wrong or, in other words, whether the accused at the time of doing the act knew the difference between right and wrong.

Knowledge of Right and Wrong. The test thus cited in McNaghten's case is often referred to as the ''right and wrong test''. Wrong as here used means wrong as defined by the law of the land. The substance of the test is much older, however, than the celebrated case with which it is generally identified. In fact, Hawkins, two hundred years ago, practically recognized it in his phrase of ''dis-

tinguishing between good and evil". However, the rule as laid down by the judges in McNaghten's case is today the only test in many American States. It has been modified, as it should be, in many jurisdictions, the test being not whether the accused knew the difference between right and wrong, but whether he had sufficient mental capacity to know such difference at the time of the act and with particular reference to it. In a New York case it was held error to use the exact language in McNaghten's case, since the amount of proof as to insanity required from the defendant under that rule ("must be clearly proved") was calculated to mislead the jury.[5]

§ 59. Rule as to Delusions. The fourth question put to the judges in McNaghten's case was: "If a person under an insane delusion as to existing facts commits an offense in consequence thereof, is he thereby excused?" The judges replied in substance:

If one labors under partial delusion only, and is not in other respects insane, we think he must be considered in the same situation as to responsibility as if the facts with respect to which the delusions exist were real. For example, if under the influence of his delusion he supposed another man to be in the act of attempting to kill him and he kills that man, as he supposes in self-defense, he would be exempt from punishment. If, however, his delusion was that the deceased had inflicted serious injury to his character and fortune, and he killed him in revenge, he would be liable to punishment.

This rule has been widely quoted and has been adopted by many American courts.

Irresistible Impulse. The highest medical authority asserts that the insane mind may, at times, be fully able to distinguish between right and wrong, and yet be driven by some uncontrollable force or irresistible impulse to the commission of the wrong. All courts apply the rule that if the accused at the time of the alleged crime did not have sufficient mental capacity to distinguish between right

[5] People v. Nino, 149 N. Y. 317.

and wrong, then he should not be punished, but owing to the difficulties in applying the irresistible-impulse doctrine, and to the great abuse that may be made of it as a defense, many courts have refused to recognize it as a test. If, however, the alienists are correct, and if it is true that an impulse to do a criminal act may be literally irresistible, and that such impulse is not the act of mere anger, revenge, or other passion, and does not proceed from causes within the control of the individual, but is caused by mental disease, then there should be no doubt as to the true legal principle. Some of our courts have recognized this fact, and in some jurisdictions the "irresistible-impulse test" is recognized equally with the "right and wrong test". While the plea should be received only upon the most careful scrutiny, yet, on the other hand, the law in its endeavors to arrive at true principles should be removed from the restraints of prejudice.

Kleptomania. Among the various forms of impulsive mania is found "kleptomania" which has been defined as "an irresistible impulse to steal". The condition would seem, however, to be rather a type of "moral insanity" than such an irresistible impulse as is referred to in the preceding section. While there appears to be in the genuine cases an absence of moral sense, nevertheless, a wholesome fear of detection exists, and upon principle it is difcult to see why such persons are not criminally responsible. While in many cases motive is apparently absent, yet motive is not an essential element of crime and, moreover, greed is as often found among the rich as among the poor. In a few cases, however, the defense of kleptomania has been recognized.

Hypnotism. Till within a comparatively recent time most people have regarded alleged hypnotic phenomena with incredulity and even ridicule. Nevertheless, hypnotism is well established in scientific reality and is governed by definite physical and psychologic laws. Charcot defines hypnotism as "an artificially-produced morbid condition or neurosis, because there is not, so far as known,

any anatomical lesion". In the hypnotic state suggestion is possible, and there is no doubt that in some cases the hypnotized subject may be made the innocent instrument of crime. So great, however, is the prejudice against this view that the matter has received but little attention judicially.

§ 60. **Evidence Relating to Insanity.** Experts may answer hypothetical questions based upon the evidence as to the sanity or insanity of a supposed person in consideration of all such circumstances. The manner and the appearance of the accused during the trial, and while testifying if called as a witness, may be considered by the jury in connection with expert opinion thereon. Experts should not be permitted to state whether or not the accused is criminally responsible since that question is for the jury, and witnesses are not to usurp the functions of the jury. The object of the testimony of experts, or opinion evidence, is to enlighten the jury who, nevertheless, are not bound by the expert opinions given.

Physicians who have attended the accused, during his illness, may testify as to relevant facts observed, and where the alleged insanity is of a hereditary type, persons who have knowledge of the notorious insanity of near blood relatives of the accused are competent witnesses. Persons, moreover, who have knowledge of the acts or conduct of the accused, who have associated with him and have had opportunities for judging his mental condition, may be permitted to give their opinions of his sanity or insanity, stating as a basis for such opinions the facts or reasons for the same.

§ 61. **Reading from Medical Works.** As to the reading from standard medical works, either for the purpose of evidence or in the course of argument, although this is allowed in some jurisdictions, nevertheless, the prevailing rule is that all such readings are inadmissible, since they are not opinions under oath and are not subjected to the test of cross-examination.

§ 62. **Insanity at Trial.** A person cannot be tried, sen-

tenced, or punished while he is insane. The question in such cases is not the responsibility or irresponsibility of the accused, but whether he has sufficient mental capacity to conduct a rational defense. The investigation of this question is entirely apart from the issue of guilt or innocence of the defendant, and is generally tried by a jury or commission specially summoned. The common-law procedure may be modified by the statutes of the particular state.

§ 63. Civil Incapacity of Insane. Insanity has also a very important bearing upon the legality or binding force of juristic acts. With relation to contracts, the old rule was that an insane person had no contractual capacity at all, but the modern, general rule is that the contracts of an insane person are voidable and not void. By this rule, an insane person who is incapable of knowing what he is doing may avoid his liability, although some jurisdictions, applying the old rule, hold his contracts absolutely void. Some States apply the doctrine of voidable contracts only where insanity has not been previously judicially determined, and hold that his contracts after lunacy is established are void. A lunatic is bound, however, for necessaries, although such obligation does not lie in contract but rather in quasi-contract.

As to testamentary capacity, the weight of authority holds that one may make a valid will though his mental capacity is less than would be required to make a contract or deed. In the case of gifts by insane persons, the same capacity is required as for contracts or deeds.

In Marriage and Divorce. Insanity at time of marriage renders the marriage void, by general rule, although some jurisdictions hold that it makes marriage only voidable. In some States, incurable insanity is also a ground for divorce.

In Torts. Although not punishable for criminal acts, nevertheless, an insane person is liable in a suit for damages for his torts. This rule, however, has been held not to apply to torts in which malice is an essential element. Ac-

cordingly, slanderous words spoken by the insane have been held to inflict no legal damage.

As Witnesses. Whether or not a person afflicted with insanity is a competent witness depends upon the degree of his mental unsoundness. If he possesses such understanding as enables him to remember and to give a correct account of things he has witnessed, and also to appreciate the binding force of an oath, he may be permitted to testify.

EXAMINATION PAPER

MEDICAL JURISPRUDENCE

Read Carefully: Place your name and full address at the head of the paper. Any cheap, light paper like the sample previously sent you may be used. Do not crowd your work, but arrange it neatly and legibly. *Do not copy the answers from the Instruction Paper; use your own words, so that we may be sure you understand the subject.*

1. Explain what is meant by "medical jurisprudence".

2. When in the trial of a case of homicide it becomes important to establish the fact that death occurred within ten hours of a certain time, what evidence, *pro* and *con*, as to the condition of the body would be material?

3. How can it be determined whether certain blood stains are caused by human blood or not?

4. *B* is arrested on suspicion of having murdered, by stabbing with a knife, a certain woman. The victim wore at the time of the murder a fur coat through which the knife passed. A knife was found upon the person of the arrested man, and on the blade were blood stains and some hairs. *B* says he killed a dog with this knife. Discuss the possible medical evidence.

5. How are poisons classified?

6. *A* died suddenly. The family had the body cremated. Some weeks after, an insurance company refused to pay a policy upon his life, charging that he died of arsenical poison, the charge being based upon *A's* symptoms during his final illness. State what such symptoms would usually be, and also state by what diseases they might be simulated.

7. What is meant by a "blank-test" in the chemical analysis of poisons?

8. A widow gave birth to a child on Nov. 27, 1911, her husband having died Feb. 1, 1911. Discuss the child's legitimacy, and state whether the law presumes it to be a legitimate child.

9. *A* was separated from his wife for several years. He returned to his home on Jan. 1, 1911. On June 15, 1911, his wife

gave birth to a viable child. Is it possible that *A* could have been the father? Why?

10. On June 1, 1911, *A* and *B* were married. A few days later, *A*, by some accident, became incurably impotent. Discuss its effect as a ground for annulment of the marriage, and also as a ground for divorce.

11. What was the purpose of a "jury of matrons" in connection with the former practice at common law?

12. Is "abortion" necessarily a crime? Explain your answer.

13. A statute provides that the intentional and unlawful causing or procuring the premature delivery of a woman "quick with child" shall be punished as a felony. In a prosecution, under this statute, the evidence showed the unlawful delivery of a foetus three months old. Can the defendant be convicted? Why?

14. Suppose, in the above case, the mother had died from the result of the unlawful operation. Of what crime, if any, at common law, would the wrongdoer be guilty?

15. In a prosecution for infanticide, what must be established in order to prove the felonious killing of a "human being"?

16. *A* is found dead with a knife projecting from a wound in his breast. What medical evidence would support or refute the theory that the knife was thrust into the body after death?

17. In defending a client for alleged murder, you contend that the wound, which was a gun shot wound, was self-inflicted. What evidence relating to the nature of wounds would uphold your theory?

18. State some important facts of vision with reference to the distance at which a person's features can be identified.

19. *A* has *B* arrested for an assault. *A* testifies that the assault was committed on a dark night in a dark place, but when he was struck heavily between the eyes he recognized *B* as his assailant by means of flashes of light in his eyes caused by the blow. Is this reliable evidence?

20. Where several persons perish in a common disaster, what is the presumption, if any, of the order of their death? That is, which is presumed to have died first?

21. Explain the "right and wrong test" in connection with the defense of insanity in a criminal prosecution.

22. What is the "irresistible impulse" test as distinguished from the "right and wrong test" of the preceding question?

23. How has an "insane delusion" been defined?

24. Distinguish between illusions and hallucinations.

25. If a person under an insane delusion as to existing facts commits an offense in consequence thereof, is he thereby excused? Why?

26. If one under the hypnotic control of another commits an offense, has he a legal defense for his act? State the defense.

27. In connection with the defense of insanity what is meant by hypothetical questions?

28. What is the rule as to reading from standard medical works when counsel is summing up a case for the jury?

29. If one becomes insane during his trial for alleged crime, what effect has it upon the trial? What effect upon his responsibility for the offense?

30. An insane person commits a tort. Can he be held liable in a suit for damages? Give reason for your answer.

After completing the work, add and sign the following statement:
I hereby certify that the above work is entirely my own.
(Signed)

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